

CLAIMS

What is claimed is new and desired to be protected by letters patent is set forth in the appended claims:

1. An in-the wall plumbing trap with integral waste and vent lines comprising:

a) a housing that is substantially rectangular in cross section having a top plate, a bottom plate, a front plate, a rear plate, a first sidewall, a second sidewall and a substantially hollow interior;

b) an overflow member within said interior of said housing and sealed engagement with said front plate, said rear plate and said second sidewall where it traverses medially therefrom to a central portion of said housing interior and then extends upwards prior to terminating well short of said top plate thereby defining two distinct chambers in communication with one another through the open passage formed between the top edge of said overflow member and said top plate with the chamber defined by said overflow member and said second

sidewall being the liquid seal chamber and the chamber defined by said overflow member and said first sidewall being the separation chamber;

c) a cylindrical vent pipe coupling exteriorly disposed on said top plate and extending perpendicularly therefrom having a central cavity to provide passage therethrough from said housing interior;

d) a cylindrical waste line coupling exteriorly disposed on said bottom plate and extending perpendicularly therefrom having a central cavity to provide passage therethrough from said housing interior;

e) a cylindrical wall flange assembly having a body exteriorly disposed on an upper portion of said front plate, offset to a region residing above said liquid seal chamber and extending perpendicularly therefrom having a central cavity forming an inlet pipe opening to provide passage therethrough to said housing interior, the distal end of said body wall flares outward and then forms a cylindrical finishing flange having a greater internal circumference than the internal circumference of said body; and

f) a removable flexible insert fabricated of a resilient impermeable material and comprising a cylindrical sealing head with

an exterior circumference slightly less the interior circumference of said body of said wall flange assembly, said sealing head having a first end and a second end with said first end having a substantially flat sealing face extending peripherally therefrom with the exterior circumference thereof greater than the interior circumference of said finishing flange, at least one sealing flange extends peripherally from a central portion of said sealing head with an exterior circumference greater than the interior circumference of said body of said wall flange, a discharge tube projects from said second end of said sealing head at a substantially 90 degree angle.

2. An in-the wall plumbing trap with integral waste and vent lines as recited in claim 1, wherein said flexible insert is installed into said wall flange assembly by inserting said discharge tube through said inlet pipe opening and urging said sealing head into said body of said wall flange assembly thereby forcing said sealing flange and said sealing face to deform and conform respectively to the inner circumferences of said body and said finishing flange thereby resulting in an air-tight and watertight seal between said flexible insert and said wall flange assembly with the distal end of said discharge tube disposed in a lower region of said liquid

seal chamber.

3. An in-the wall plumbing trap with integral waste and vent lines as recited in claim 1, wherein said vent pipe coupling is disposed above said separation chamber.

4. An in-the wall plumbing trap with integral waste and vent lines as recited in claim 1, wherein said top edge of said overflow member is disposed on a plane inferior to said inlet pipe opening

5. An in-the wall plumbing trap with integral waste and vent lines as recited in claim 1, wherein said bottom plate is offset from said top plate in the direction of said second sidewall thereby providing a pitch to said first sidewall and said second sidewall relative to said top plate and said bottom plate.

6. An in-the wall plumbing trap with integral waste and vent lines as recited in claim 5, wherein said first sidewall, said second sidewall, the substantially vertical portion of said overflow member and said discharge tube are substantially parallel.

7. An in-the wall plumbing trap with integral waste and vent lines as recited in claim 6, wherein said pitch of said sidewalls, overflow member and discharge tube is substantially 10 degrees off the vertical axis.

8. An in-the wall plumbing trap with integral waste and vent lines as recited in claim 1, wherein said trap is installed by securing said waste line coupling to said waste line, said vent pipe coupling and inserting the stem of a drain pipe into said inlet pipe opening which further compresses said sealing flanges thereby increasing and assuring the integrity of the seal.

9. An in-the wall plumbing trap with integral waste and vent lines as recited in claim 1, wherein said effluent waste water flows through said drain pipe into said flexible insert, down said discharge tube into said liquid seal chamber where the water is retained therein by said overflow member until the water level reaches the top of said overflow member which then acts as a spillway to allow the overflow to fall into said separation chamber and directed into said waste line, any gas contained in the therein escapes through said vent line due to gasses natural tendency to rise thereby avoiding back pressure and siphoning and allowing said waste water to flow smoothly down to said waste line.

10. An in-the wall plumbing trap with integral waste and vent lines as recited in claim 1, wherein said flexible insert further comprises a catch basin integral with the distal end of said discharge tube, said catch basin having a planar base with a peripheral sidewall.

11. An in-the wall plumbing trap with integral waste and vent lines as recited in claim 2 wherein said flexible insert has a female notch made into the said sealing face that engages a male key extending interiorly off of said finishing flange to hold said flexible insert in place.